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NEW HAVEN, CONNECTICUT

January 13, 1947.

Dear Dr. Luria -

In your last letter, you suggested that you might soon again have time to pay some attention to phage patterns in K-12. We are actively pursuing various aspects of the genetic behaviour of this beast, in this laboratory, but as we discussed at Cold Spring Harbour last summer, it would be most appropriate for us to join forces on this particular question.

I am under the impression that we have sent so far only the prototrophic K-12. Resistance mutations in this strain could not be analysed directly because of the absence of nutritional factors. I am sending the following strains: Y53, which requires threonine, leucine and thiamin and is lactose-negative (readily revertible.) and 58-161, requiring biotin and methionine. These are both multiple mutants derived in several steps from irradiated K-12. We have worked in some detail with  $T_1^R$  mutants of both of these, but have done relatively little with other resistance mutants. So far, every  $T_1^R$  has also been resistant to T3 and T5; the same holds for  $T_3^R$ . A mucoid character seems to be an inconsistent accompaniment of resistance. Many surviving colonies after treatment with T7 have been freed of phage, and generally found to be sensitive! This might seem to suggest a non-heritable resistance, or a spurious one! We have, however, obtained a stably  $T_7^R$  in Y53- $T_{1,3,5}^R$ . We hope to have an antigenic analysis of the mucoid types done eventually.

Best of luck! If you would care to repeat any of the published experiments, we would appreciate it.

With best regards, Sincerely, Joshua Lederberg